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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/018,387

06/05/2002

John Gordon Rushbrooke

602-1551

4707

7590

06/29/2004

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EXAMINER

LAUCHMAN, LAYLA G

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/018,387

Applicant(s)

RUSHBROOKE ET AL.

Examiner

L. G. Lauchman

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 33-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 does not have active method steps and fails to conform with current U.S. practice. In Claims 33, the phrases "may be," "can be" render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Claim 33 recites the limitation "the detectors" in line 4. There is insufficient antecedent basis for this limitation in the claim. The recitation "from upstream and downstream regions of the micro-samples " is not clear because there is no stream of fluid indicating a flow direction. The same concerns Claim 34, the recitation "the down stream optical system" is not defined by Claim 33. Claim 50 recites the windows of photomultipliers. There is insufficient antecedent basis for this limitation in the claim. Claim 49 recites "the photomultiplier tubes, image intensifiers, and intensified CCD arrangement." There is insufficient antecedent basis for this limitation in the claim. The recitation "otherwise" in Claim 53 makes the claims indefinite because it is not clear in which other way the claim subject is directed.

The apparatus of Claims 57 and 58 fails to conform with current U.S. practice. It reads on as a combination of an apparatus and a method, and the limitation like "the focal length of the lens", "the plane of an array" lack antecedent basis. The recitations "typically", "otherwise", "predominantly" are relative terms and make the claim indefinite.

Claim 61 recites, "the other sample sites" in the 4th line of the claim. There is insufficient antecedent basis for this limitation in the claim. The recitation "upstream and downstream of the sites of interest in the sample" is not clear because there is no stream of fluid indicating a flow direction.

Claim 62 recites, "analysis as above mentioned" in the last line of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 63 recites, " the objectives are arranged above or below a sample array." It is not clear whether there is another sample array.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Volcker et al (US 6,686,582), and further in view of Tiziani et al (Applied Optics, vol. 33, No. 4)

As to Claims 33-56, Volcker et al teach all (see Fig. 2) a method of imaging a plurality of micro-sample light emitting sites simultaneously onto separately addressable detectors (see col. 2, lines 33-43) , which may be discrete regions of the array detector, so that light emitted from each site can be monitored by one of the detectors, wherein a corresponding plurality of objective lenses 21 each comprising a micro-lens are located adjacent to the micro-sample array 1 with one objective lens for each micro-sample, the latter are located at or near the focal point of each of the microlenses so that the light emanating from each micro-sample is collected by its respective objective lens and converted into a beam of parallel or near parallel rays, the objective lenses are arranged so that the axes of all the beams issuing therefrom are parallel and spaced apart.

Volcker et al do not teach the pinhole aperture positioned at the focal point of the focusing lens. Tiziani et al use a small aperture for detection of light emanating from the focal point of the objective lenses of a microlens array in a similar method and apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pinhole aperture in the invention of Volcker as taught by Tiziani, since the pinhole would provide an image of the micro-sample light emissions in the plane of an array of photoelectric detectors.

As to Claim 57-60, Volcker et al teach all the elements as claimed, except a pinhole aperture located in front of the detector lens, circuit means and computing and analyzing circuit means along with the memory means. Tiziani et al use a small aperture for detection of light emanating from the focal point of the objective lenses of a microlens array in a similar method and apparatus. The article also teaches computing,

analyzing and memory means (see p. 569, paragraph 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pinhole aperture in the invention of Volcker as taught by Tiziani, since the pinhole would to provide an image of the micro-sample light emissions in the plane of an array of photoelectric detectors. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the invention of Volcker with the computing , analyzing and memory means in order to improve the efficiency of the fluorescence measurement.

As to Claims 61-64, Volcker et al teach all the elements as claimed, except for a plate with a small aperture located at the focusing point of all light paths and in data relating to the quantity of incident light and address information is stored. Tiziani et al use a small aperture (fig. 4) for detection of light emanating from the focal point of the objective lenses of a microlens array in a similar method and apparatus. The article also teaches the storage means (p.569). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the pinhole aperture in the invention of Volcker as taught by Tiziani, since the pinhole would to provide an image of the micro-sample light emissions in the plane of an array of photoelectric detectors. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the invention of Volcker with the storage means in order to improve the efficiency of the fluorescence measurement.

Conclusion

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to TC 2877 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is (703) 872-9306.

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

- a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and
- b) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

A handwritten signature in black ink, appearing to read 'L. G. Lauchman', with a long horizontal flourish extending to the right.

L. G. Lauchman
Patent Examiner
Art Unit 2877

June 18, 2004